

HAYNES (W. H.)

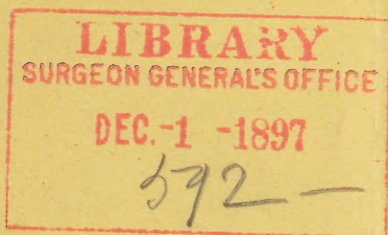
OBSTETRICAL PARALYSIS OF
INFANTS.

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BY

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There are three kinds of obstetrical paralysis affecting new-born children, namely, that of the face, arm, and lower extremities. The first and last of these forms are so extremely rare that the term, "obstetrical paralysis of infants," has come to be wholly associated with that of the arm, which is the form to be considered in this paper. Again, an apparently similar condition of the upper extremity may be seen where there is a fracture or a dislocation of one or more of the bones of the affected extremity; these, also, I exclude, on account of the nature of the lesion, the paralysis being secondary in character, and the cure of the originating lesion cures the apparent loss of power, but limit myself to the class of what may be termed true obstetrical paralysis of the upper extremity in infants, where the lesion is solely in the mixed, cervical nerves and brachial plexus.

I know of no more mortifying position than that attending the confinement of a woman of a fine healthy male or female child, but with total paralysis of one of its upper extremities, particularly if it be the right, which in my experience it usually is. In fact, in one case where the child was still-born, but was revived with this condition, the mother remarked that "she wished the doctor had let it die." Fortunately, it is a condition that is very infrequent, so much so, that you will find no mention of it in the ordinary school books on obstetrics or diseases of children, and even where mentioned in the newer Systems and Text-books it is short, slight, and incomplete; while it is only in a few of the later works on diseases of the nervous system, notably Starr and Sachs, where any clear and complete description of the disease is given. I doubt if many of you have ever met such a case; I had not in a general practice of twenty-years' experience; neither had some of our best practitioners in their

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long experience, who saw some of these cases, till the following experience befell me :

In February, '96, Mrs. W., after six natural confinements, was taken in labor with her seventh child, during the course of which the head was naturally and readily delivered, but the shoulders became impacted, the right under the pubes, and no manipulation could extricate them, till a towel was roped around the child's



neck, and by main force and strong propulsion it was finally delivered, weighing eight and a half pounds. The next day the child's right upper extremity was found to be totally paralyzed, and the outer end of the clavicle on the same side injured. Otherwise than this it was perfectly well, sleeps, nursed, does not cry on handling; arm hung like a loose-jointed, flail-like appendage. As to sensation, it is not readily demonstrable in these young subjects, in which it is usually deficient, and there is no electrical response. The treatment to be described was instituted, and first there was a return of motion in the shoulder, then the arm,

so that now she can flex the forearm, and latterly the child cries on the application of the electrical current, showing a probable return or development of sensibility, with slight contractions on interrupting the current. Otherwise it has thriven well. Dr. John C. Shaw was kind enough to see the child soon after birth, immediately recognized the case as one of obstetrical paralysis, due to injury to the cervical nerves from traction before they join to form the brachial plexus, recommended the plan of treatment carried out, and to his kindness I am also indebted for the privilege of showing the two other cases from his clinic at the Brooklyn Eye and Ear Hospital.

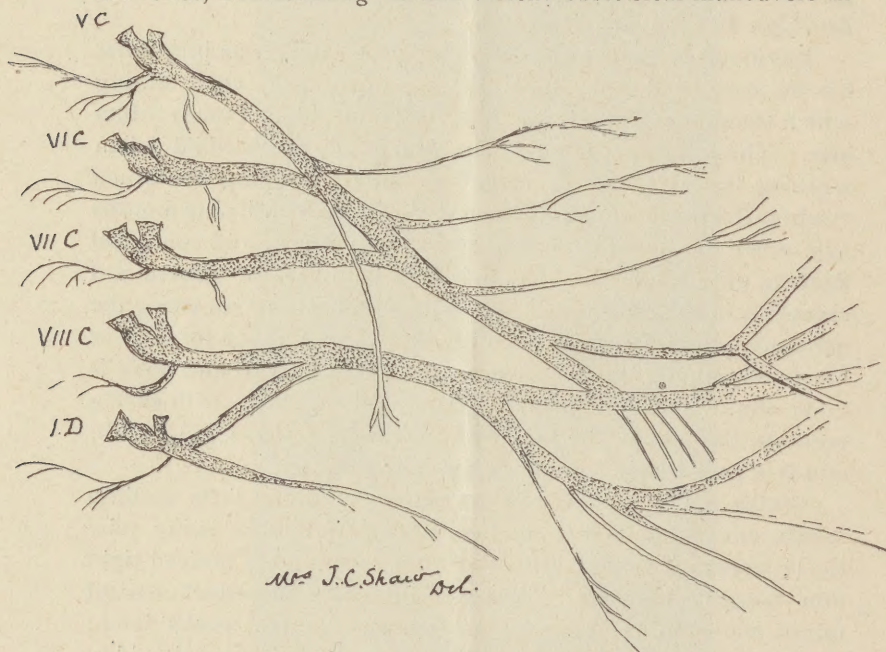
Raymond B., now two and a half years old, was born after his mother's first and lingering instrumental delivery, during which traction was made on the head and (doctor said) other arm. The nurse first noticed the condition of the child when washing it. The mother says, that notwithstanding continued electrical treatment no improvement was noticed until nine months ago, when motion at shoulder was first noticed, and could feel sticking of pin that far. There is now paralysis of motion and sensation of the right upper extremity as follows : Can swing the extremity about and raise shoulder, but cannot move forearm or hand ; sensibility has returned to the same extent, and there is good contraction to both galvanism and faradism, with strong currents, throughout the member ; otherwise enjoys good health, and is a fine, sturdy, and knowing child.

Cecilia McL., aged five years, second child of a little mother, whose confinements are all instrumental (children being relatively large). On the third day after birth nurse noticed right arm hanging helpless ; otherwise the child is perfect, except forcep marks on head. Seen by Dr. Shaw three weeks later ; proper treatment instituted ; improvement began first at shoulder, then elbow, and lastly in hand ; sensation returning correspondingly, so that now few will notice any disability, except in the finer movements of pronation and supination, and strong flexion of fingers ; there is no atrophy, sensation is normal, and electrical reaction is good to both currents throughout ; general health perfect.

Here we have three typical cases, a relatively early one, one in which there is a very slow improvement, and another in which we see a progressive and continuous repair. This affection was first described by Duchenne, in the third edition of his *Electricalization Locale*, Paris, 1872, page 353, where he describes all

varieties of cases, and insists on its early and proper electrical treatment. In the eleventh volume of Ziemssen's *Cyclopedia of the Practice of Medicine*, 1874, W. Wood & Co., 1876, page 561, Erb called the attention of the medical profession throughout the world, to-wit: Giving Duchenne the credit of having first described it, since which time nearly all works on diseases of the nervous system make more or less mention of it, but giving Erb the credit and calling it after his name.

It is generally brought about through difficult or instrumental deliveries, necessitating certain violent obstetrical maneuvers in



which the forceps have been used; traction made on the head or arm; the use of the finger in the armpit in the form of a hook, making strong traction; a pressing of the shoulder under the symphysis pubis; replacing the arm; assisting delivery of the after-coming arm or head, as in presentations of the breech; or, if the attendant has been forced to extract the body, after delivery of the head, by exerting great tracting force (as in my own case). It may happen to the most proficient, such as Tarnier, and in the most simple cases, for Dr. Shaw has seen two cases in which no manipulations were used, and where the condition was simply due to the extension and compression of neck and shoulders under the symphysis pubis, as occurs in natural labors

only a little while unduly prolonged. Erb says it is especially due to the energetic application of the so-called "Prague grip," in which the fingers are applied, like a fork, over the back of the neck and endangering the brachial plexus by energetic traction and compression. It may be bilateral, and seventy-five per cent. of the cases seen by Starr were of the left arm. He says: "It is the pressure of the obstetrician's fingers which causes the injury in the majority of cases, and I have noticed that in seventy-five per cent. of the cases seen the paralysis was in the left arm, which finds its explanation in the greater length of the middle finger of the hand which is doing the damage. In the act of traction there is a tendency for the obstetrician to flex the fingers, and thus the tip of the finger is pressed deeply into the side of the child's neck. The cause being thus evident, the complicating affection may be avoided by a little care."

The lesion produced by any of these manipulations may be simply a stretching of the nerve tubes, laceration, complete rupture or compression due to direct pressure from local edema, intra or extra hemorrhage about the nerve sheath, and is commonly located in the fifth, sixth, and seventh lower cervical nerves, which go to form the outer and posterior cords of the brachial plexus, causing the form of upper-arm palsies, though the inner cord may be also involved, when we have the whole upper extremity involved, as in the second case related above. (See diagram.)

Usually the following muscles are involved: the deltoid, biceps, brachialis anticus, infraspinatus, supinator longus, and occasionally the extensors of the hand, causing the following characteristic appearance, which is usually very soon discovered after birth: the arm hangs perfectly limp alongside of the body; forearm extended on arm and rotated inward; the child makes no movement whatever; at this time there is no apparent sensibility and no pain. If the arm be lifted and then let go it falls at once into this position; the paralyzed muscles are relaxed, and their opponents are not rigid, so that the joints are freely movable; there is loss of all electrical excitability, both galvanic and faradic. Later, in certain cases (those of the upper-arm type) motion in forearm and fingers will be seen, slow atrophy of the paralyzed muscles ensue, making them feel soft and yielding. This may not be apparent owing to the deposit of fat in fairly healthy children. Some rigidity in the unaffected muscles correspondingly appears, but permanent rigidity rarely develops;

sensibility becomes normal from development and repair ; first, galvanic excitation returns, and later faradic ; normal development is retarded, and after a few years there may be contractions in cases which do not recover.

From the foregoing description of the condition it will be readily seen that the diagnosis at the time of birth is very easily made, though it may be complicated by a facial (Bell's) paralysis, due to the same cause (forceps), a fracture, or dislocation—which also will be readily made out and remedied. Later on (after six months) it may be necessary to differentiate it from some form of cerebral palsy of infants, but in these cases there will be hemiplegia, a diplegia, spastic condition of the muscles, reflexes increased, no change in electrical reaction, with probably a history of convulsions, mental defect or general disturbance, flexions, contractions of joints, rigidity, and no loss of sensation.

The prognosis varies with the extent and character of the lesion and early application of proper treatment. It is variously stated by various writers, the early ones stating it as grave, the later ones, under proper treatment as good ; this discrepancy being due to its more frequent and early recognition now and, consequently, earlier application of proper treatment. It ranges from complete spontaneous recovery after a few months to only partial recovery after several years, and depends on the causes first stated in this section ; as, for instance, in cases of effused serum or blood, when it is absorbed recovery ensues ; also, in stretching or slight lacerations recovery follows repair, but in complete lacerations proper repair may not take place at all, but partial or inflammatory and degenerative changes take place, causing every possible resulting degree of peripheral neuritis. Then again, the treatment may be so long delayed as to allow of degenerative changes taking place in nerve and muscle, which places the condition of the limb beyond recovery, or only slightly so. This latter cause is specially stressed upon by Duchenne, who emphasizes the early institution of proper electrical treatment.

In the early stages the treatment consists in proper bandaging, flexing the elbow, which also assists in allowing repair of the nerves by holding up the forearm and so preventing dragging or further stretching the nerves : in addition using friction, massage, douching or sponging, and after a time encouraging motion. After a few weeks, Duchenne says very early, the use of electricity must be added. If response can be had from the faradic

current, use it ; but this is usually not the case, so that the first application where the case is seen early will be of galvanism, mild, constant, and interrupted currents for short sittings, and later on, when faradic reaction returns, both together. As the child grows older gymnastic exercises and kindergarten methods can be added.

